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The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.  
Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ Training Office, Bldg. 911A.*

## C-A OPERATIONS PROCEDURES MANUAL

4.46 Procedure for Accessing the C-A Radiological Areas and Berms:  
AGS Ring Fan Houses (A,B,C,D and E), Northwest Corner of the Target Building,  
TANDEM/AGS ALCOVE, the Booster Berm, the U-W (AtR) Berm,  
and the RHIC Berm During Accelerator Operation

Text Pages 2 through 5

### Hand Processed Changes

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Approved: \_\_\_\_\_  
Collider-Accelerator Department Chairman      Date

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**4.46 Procedure for Accessing the C-A Radiological Areas and Berms:  
AGS Ring Fan Houses (A,B,C,D and E), Northwest Corner of the Target Building,  
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Berm During Accelerator Operation**

**1. Purpose**

To provide MCR Operators and CAS technicians instructions for controlling personnel access to the C-A Radiological Areas and Berms: AGS Ring Fan Houses (A,B,C,D and E are High Radiation areas during high intensity proton operation), Northwest Corner of Target Building, Tandem/AGS Alcove, the Booster Berm (exclusive of the roof of building 914), the U-W (AtR) berm, and the RHIC berm, when the C-A accelerators are operational. When the AGS is shutdown and the MCR not staffed, the High Radiation hazard will not exist and the "High Radiation Areas" will be deposted (when practical).

**2. Responsibilities**

- 2.1 The MCR Operators and Collider-Accelerator Support (CAS) technicians are responsible to execute this procedure when appropriate.
- 2.2 The Operations Coordinator (OC) is responsible to grant permission for persons to enter the High Radiation Areas covered by this procedure, while the beam is on.
- 2.3 Personnel who intend to work in AGS Fan House A are responsible to obtain a Chipmunk for use as an area monitor for jobs longer than 5 minutes.

**3. Prerequisites**

- 3.1 Prospective entrants shall have "valid" C-A Access Training.
  - 3.1.1 Contractors and Plant Engineering personnel not having valid C-A Access Training shall be escorted as per [C-A OPM 2.16 Escort Personnel in C-A Primary Areas](#).
- 3.2 AA194 key Tandem/AGS Alcove (from MCR captured key locker), as required.
- 3.3 "Fan House Padlock" key (from MCR captured key locker), as required.
- 3.4 Entrants must wear a TLD and an alarming SRD where appropriate.
  - 3.4.1 Obey all postings.

#### 4. **Precautions**

- 4.1 Radiation levels of a few rem per hour are possible in some of these areas when high intensity protons are present in the AGS. The procedure must be carefully followed by all who enter when the beam is on.
- 4.2 Fault radiation levels can exceed 5 rem/hr.
- 4.3 The Chair of the Radiation Safety Committee, with the concurrence of the C-A Radiation Control Division representative, may allow access to these areas by issuing a temporary procedure, or memorandum, on a case-by-case basis, containing the following elements:
- Training requirements
  - HP requirements
  - Radiation Work Permit (review if needed)
  - Other relevant procedural steps

#### 5. **Procedure**

##### 5.1 Radiological Area Accessibility

5.1.1 Accessibility to C-A Radiological Areas is permitted according to the following table:

<b>Area Accessibility</b>	<b>Access with “BEAM ON” During Proton Operation</b>	<b>Access With “BEAM ON” During Ion Operation</b>
Booster Berm	No access permitted	No access permitted
AGS Berm	Permitted see <a href="#">OPM 4.46</a>	Permitted see <a href="#">OPM 4.46</a>
UW line (AtR) Berm	No access permitted	Permitted see <a href="#">OPM 4.46</a>
RHIC Berm	Permitted (see CAS RHICBERM)	Permitted (see CAS RHICBERM)
RHIC “roofs”	Permitted see <a href="#">OPM (4.100)</a>	Permitted see <a href="#">OPM (4.100)</a>
Tandem/AGS Alcove	No access permitted	No access permitted
NW Corner Tgt bldg	No access permitted	Permitted see <a href="#">OPM 4.46</a>
AGS Fan Houses	No access permitted	Permitted see <a href="#">OPM 4.46</a>

  

<b>Area Accessibility</b>	<b>Short Access with “BEAM OFF” During Proton Operation</b>	<b>Short Access with “BEAM OFF” During Ion Operation</b>
Booster Berm	CA Gate Watch per <a href="#">OPM 4.1</a>	CA Gate Watch per <a href="#">OPM 4.1</a>
AGS Berm	Permitted see <a href="#">OPM 4.46</a>	Permitted see <a href="#">OPM 4.46</a>
UW line (AtR) Berm	CA Gate Watch per <a href="#">OPM 4.1</a>	Permitted see <a href="#">OPM 4.46</a>
RHIC Berm	Permitted (see CAS RHICBERM)	Permitted (see CAS RHICBERM)
RHIC “roofs”	Permitted see <a href="#">OPM (4.100)</a>	Permitted see <a href="#">OPM (4.100)</a>
Tandem/AGS Alcove	CA Gate Watch per <a href="#">OPM 4.1</a>	CA Gate Watch per <a href="#">OPM 4.1</a>
NW Corner Tgt bldg	CA Gate Watch per <a href="#">OPM 4.1</a>	Permitted see <a href="#">OPM 4.46</a>
AGS Fan Houses	CA Gate Watch per <a href="#">OPM 4.1</a>	Permitted see <a href="#">OPM 4.46</a>

- 5.2 Personnel, including Mechanical Services (Pump Room personnel), who intend to enter the C-A Radiological Areas will:
- contact the Operations Coordinator (OC) to ask permission for access.
  - report estimated time needed to complete the access.
- 5.2.1 The OC shall determine whether to permit the access based upon the importance of the task, the time required to complete the task, the availability of gate watch standers, and the area accessibility (see paragraph 5.1.1).
- 5.3 When the OC gives permission for access, an Operator or CAS Technician shall:
- 5.3.1 Instruct the entrant(s) to read and follow guidance found in Standing Enhanced Work Permits and Radiation Work Permits for Posted High Radiation Areas With Beam On (Fenced and Locked Beam Line Shield Tops and Crotches Within Building 912), and enter those permits on the signoff list in 5.3.2. The permits can be found on the web at [http://www.rhichome.bnl.gov/AGS/Accel/SND/rwp/rad\\_work\\_permits.html](http://www.rhichome.bnl.gov/AGS/Accel/SND/rwp/rad_work_permits.html).
- 5.3.1.1 The above step is not required to access the RHIC berm or RHIC roofs.
- 5.3.2 Remind the entrant that the Standing Radiation Work Permits limit dose to individuals to 20 mRem, and that the job must cease if the individual gets a 20 mRem dose.
- 5.3.3 For fenced areas, including Booster Berm, U/W Line Berm, Tandem AGS Alcove, Northwest corner of the Target Building, and AGS Fan Houses, control access as would be done for a primary gate for a short access, or for access during Ion Operation. Sign persons in or out using the C-A Gate Security Log Sheet Form, [C-A-OPM-ATT 4.1.a](#).
- 5.3.3.1 The Gate Watch shall write N/A (Not Applicable) on line 4 (Confirmation of RCT Survey) on the Gate Security Log Sheet Form.
- 5.3.3.2 For a long access with beam off, the OC may decide to leave the gate to the area without a gate watch, as long as the OC holds the appropriate Reset/Enable Key from MCR-2-1.

**Note:**

The appropriate Reset/Enable key is the one for the critical device for the accelerator upstream of the high radiation area you wish to enter.

**6. Documentation**

6.1 [C-A-OPM-ATT 4.1.a, "C-A Gate Security Log Sheet Form"](#).

**7. References**

7.1 [C-A-OPM-ATT 4.56.d, "Procedure for Sweeping the Northwest Corner of the Target Building 912"](#).

7.2 [C-A-OPM 2.16, "Procedure to Escort Personnel in C-A Primary Areas, Controlled Areas, Radiological Areas and ODH Areas."](#)

**8. Attachments**

None